

**UNITED STATES DISTRICT COURT  
EASTERN DISTRICT OF MISSOURI  
EASTERN DIVISION**

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**UNITED STATES OF AMERICA,**

**Plaintiff,**

**and**

**SIERRA CLUB,**

**Plaintiff-Intervenor,**

**v.**

**AMEREN MISSOURI,**

**Defendant.**

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**Case No. 4:11 CV 77 RWS**

**PLAINTIFF-INTERVENOR SIERRA CLUB’S POST-TRIAL BRIEF  
AND PROPOSED CONCLUSIONS OF LAW**

Plaintiff-Intervenor Sierra Club joins in the United States’ Post-Trial Brief and Proposed Conclusions of Law, except to the extent discussed in Part II, below. Sierra Club files this separate Post-Trial Brief and Proposed Conclusions of Law in order to demonstrate that: (a) Sierra Club has established organizational standing with respect to its request for injunctive relief at the Labadie plant; and (b) the equities favor remediation relief at Labadie on a quicker timetable than proposed by the United States.

Simply put, Sierra Club seeks expedited remediation because lives are at stake. Dr. Joel Schwartz’s testimony establishes that Rush Island’s excess emissions have resulted in hundreds of premature deaths, and that dozens of additional deaths will occur on a forward-going basis for as long as Rush Island continues to emit excess SO<sub>2</sub>.

In all other respects, Sierra Club joins the United States' Post-Trial Brief and Proposed Conclusions of Law.<sup>1</sup>

**I. SIERRA CLUB HAS ESTABLISHED STANDING WITH RESPECT TO INJUNCTIVE RELIEF AT LABADIE**

The basis for Sierra Club's standing to seek injunctive relief at Labadie is much the same as the basis for its standing to seek an injunction at Rush Island: its Members' reasonable concerns about the increased risks of adverse health effects from Rush Island's excess SO<sub>2</sub>, and the consequent loss of enjoyment of outdoor activities. As the Court noted in its summary judgment ruling, several of Sierra Club's "Standing Members" aver that their concerns about increased health risks would be alleviated if Ameren installed pollution control equipment at Rush Island. (ECF No. 1055 at 7; citing to ECF Nos. 943-11 at ¶16-17; 943-12 at ¶18; 943-13 at ¶¶15-17). Similarly, as shown below, the Members' concerns would be further alleviated if Ameren installed pollution controls at Labadie to mitigate the effect of the excess 160,000 tons of SO<sub>2</sub> already emitted—a pollution debt that Ameren cannot repay simply by installing pollution controls at Rush Island in the future. Remediation relief at Labadie would directly impact on their enjoyment of recreational activities in a manner similar to injunctive relief at Rush Island.

To show organizational standing to seek mitigation relief at Labadie, Sierra Club must show that one of its members "(1) has suffered an 'injury in fact' that is (a) concrete and particularized and (b) actual or imminent, not conjectural or hypothetical; (2) the injury is fairly traceable to the challenged action of the defendant; and (3) it is likely, as opposed to merely

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<sup>1</sup> Sierra Club's citations in this pleading are to the United States' Proposed Findings of Fact ("U.S. FOF ¶\_\_"), which Sierra Club joins, and to Sierra Club's Additional Proposed Findings of Fact ("S.C. Add. FOF ¶\_\_"), which is being simultaneously filed.

speculative, that the injury will be redressed by a favorable decision.” Friends of the Earth v. Laidlaw Env'tl. Servs. (TOC), Inc., 528 U.S. 167, 180-81 (2000).<sup>2</sup>

To meet the Laidlaw requirements with respect to relief at Labadie, Sierra Club offers evidence from two of its original Standing Members—trial testimony from Douglas Melville and a supplemental declaration from Gary Kappler, who was unable to testify at trial for medical reasons.<sup>3</sup> All that is necessary to support standing is a determination that one individual has alleged sufficient injury in fact, fairly traceable to the plant, which is likely to be redressed by a favorable decision. Sierra Club v. U.S. Army Corps of Engineers, 645 F.3d 978, 986 (8th Cir. 2011).

A. Injury in Fact.

As the Court has noted, an individual’s “‘reasonable concerns about the effects of’ pollution can constitute an injury in fact, when the pollution ‘directly affected [the individual’s] recreational, aesthetic, and economic interests.’” (ECF No. 1055 at 6, quoting Laidlaw, 528 U.S. 167, 183). “[A]n identifiable trifle will suffice,” Sierra Club v. U.S. Army Corps of Engineers, 645 F.3d at 988 (quoting Sierra Club v. Franklin Cty. Power of Ill., 546 F.3d 918, 925 (7th Cir. 2008)), and the injury need not be easily quantifiable. (ECF No. 1055 at 6).

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<sup>2</sup> In granting summary judgment to Sierra Club with respect to its request for injunctive relief at Rush Island, the Court found that it was undisputed that Sierra Club had established that “the interests at stake in this litigation are germane to [its] purpose,” and that neither Sierra Club’s claim nor the requested relief “requires the participation of individual members in this lawsuit.” (ECF No. 1055 at 11, quoting Laidlaw, 528 U.S. 167, 180-81). Sierra Club submits that the same findings apply to its request for injunctive relief at Labadie.

<sup>3</sup> Sierra Club has filed a “Motion to Supplement the Record on Standing” with Mr. Kappler’s Supplemental Declaration, in light of information received after trial that Mr. Melville intends to relocate to Florida with his daughter’s family. (ECF No. 1105). Given that Mr. Melville has not yet moved, and circumstances can change, Sierra Club has referenced Mr. Melville’s testimony in this pleading.

Here, both Mr. Melville and Mr. Kappler have averred that they are concerned about the health effects of the excess SO<sub>2</sub> emissions from Rush Island, including the effects from having been exposed to the excess pollution for twelve years. Mr. Melville testified regarding his concerns that respiratory or cardiovascular problems may ensue from SO<sub>2</sub> pollution (S.C. Add. FOF ¶4). Mr. Kappler avers that he suffers from bouts of bronchitis, and is concerned about developing further respiratory problems in the future due to the cumulative effects of the excess SO<sub>2</sub> emissions. (S.C. Add. FOF ¶9).

Both Mr. Melville and Mr. Kappler have explained that their concerns about the excess pollution have affected them in a particularized, personal, and individual way, Lujan v. Defs. of Wildlife, 504 U.S. 555, 561, n. 1 (1992), and have impacted on their recreational interests. Mr. Melville testified that his concerns about Rush Island's excess SO<sub>2</sub> decrease his enjoyment when he leads hiking outings because he is worried about exposing himself and his fellow hikers to harmful pollution. (S.C. Add. FOF ¶4). Mr. Kappler states that, because of his concerns about Rush Island's excess emissions, he has not been going wade fishing or searching for archeological artifacts in the area as often as he used to, and has decreased enjoyment of these activities when he does them. (S.C. Add. FOF ¶9).

Both Mr. Melville and Mr. Kappler have averred that installing pollution controls at Rush Island in the future would not completely alleviate their concerns, due to their exposure to Rush Island's continuous excess pollution for twelve years and counting. They aver that their concerns would be further alleviated if Ameren were to compensate for the past pollution by improving air quality in the region through pollution controls at Labadie that would offset future SO<sub>2</sub> emissions by an amount equal to the illegal SO<sub>2</sub> emitted by Rush Island. Mr. Melville testified that it would "ease his mind" and alleviate his worries during his hikes if SO<sub>2</sub> were

removed from the Labadie plant. (S.C. Add. FOF ¶5). Mr. Kappler states: “My concerns about the increased health risks from my past exposure to Rush Island’s excess SO<sub>2</sub> emissions would be further lessened – and I believe I would directly benefit – if Ameren were required to install SO<sub>2</sub> controls at Labadie and improve future air quality in the region where I live by an equal amount.” (S.C. Add. FOF ¶11).

Finally, both Mr. Melville and Mr. Kappler state that, if Ameren were to compensate for its past pollution at Rush Island by improving air quality by an equal amount through pollution controls at Labadie, their recreational interests would be directly affected in a positive way. Mr. Melville testified that “[i]t would help me a lot because then I wouldn’t have to worry about what’s the weather forecast for that day, is it going to be a yellow day or a green day and which way is the wind blowing so you can relax and enjoy the hike for what it is, you’re enjoying nature and the outdoors.” (S.C. Add. FOF ¶¶4-5). Mr. Kappler states: “I would be more inclined to go wade fishing and artifact hunting, and would enjoy those activities more because I would worry less about health risks.” (S.C. Add. FOF ¶11).

The concerns expressed by Mr. Melville and Mr. Kappler are “concrete and particularized” and “actual or imminent.” Indeed, the overwhelming scientific evidence at trial showed that the increased health risks that concern Mr. Melville and Mr. Kappler are real and chilling. The scientific consensus—as summarized by Dr. Schwartz’s trial testimony and reflected in statements by organizations such as EPA, the World Health Organization, and the American Heart Association—establishes a clear causal link between PM<sub>2.5</sub> exposures and deleterious health effects, including premature death. (U.S. FOF, ¶¶242-257).

That scientific consensus, and the decades of research upon which it rests, is more than sufficient to show that the Members’ concerns are concrete, particularized, actual, and imminent.

However, Dr. Schwartz also quantified the effect of Rush Island's excess pollution on premature mortality in two ways. Using a "reduced form" model based on his 2009 publication, Dr. Schwartz calculated that SO<sub>2</sub> pollution from Rush Island results in approximately four premature deaths per 1,000 tons in downwind communities. (S.C. Add. FOF ¶¶14-16). Applying these results to Dr. Staudt's estimates of Rush Island's excess emissions, Dr. Schwartz determined that the emissions have been responsible for an estimated 637 premature deaths during the period 2007-2016, and approximately 62 additional deaths per year thereafter until the Rush Island excess emissions cease. (S.C. Add. FOF, ¶¶17-21). Under the second methodology, putting the CAM<sub>x</sub> modeling results through EPA's Benefits Mapping Analysis Program (BenMAP), the estimated deaths are even higher: 879 excess deaths during the 2007-2016 period and approximately 86 deaths per year going forward. (S.C. Add. FOF ¶¶22-26). These estimates establish with a high degree of certainty that substantial deaths are caused by Rush Island's excess SO<sub>2</sub> pollution, and that people's lives are at stake. (S.C. Add. FOF, ¶¶27-28).

Thus, Mr. Melville and Mr. Kappler have demonstrated that they have a direct stake in mitigation relief at Labadie, and have suffered an injury in fact.

B. Traceability.

To establish traceability, Sierra Club "must merely show that a defendant discharges a pollutant that causes or contributes to the kinds of injuries alleged in the specific geographic area of concern." (ECF No. 1055 at 6, quoting Friends of the Earth, Inc. v. Gaston Copper Recycling Corp., 204 F.3d 149, 161 (6th Cir. 2000) (internal quotes omitted)). In finding traceability relating to injunctive relief at Rush Island, the Court noted that plaintiffs have presented evidence that excess SO<sub>2</sub> from Rush Island impacts air quality across a wide and varying region

that includes areas to the North and Northwest of Rush Island. (*Id.* at 9). This is the area where both Mr. Melville and Mr. Kappler live and recreate.

The trial evidence establishes that the same “geographic area of concern” is directly harmed by increased SO<sub>2</sub> emissions from Rush Island, and would directly benefit by reduced SO<sub>2</sub> emissions from Labadie. As plaintiffs’ modeling expert Lyle Chinkin showed, pollution from Labadie affects the same communities as that from Rush Island, and to the same degree. (U.S. FOF ¶¶336-340). Given this geographical nexus, any efforts to reduce Labadie pollution would improve air quality in the same areas affected by Rush Island’s pollution, and would pay back the pollution debt Ameren incurred through its excess Rush Island emissions. Thus, traceability is established.

C. Redressability.

“A plaintiff satisfies the redressability requirement when he shows that a favorable decision will relieve a discrete injury to himself. He need not show that a favorable decision will relieve his every injury.” *Larson v. Valente*, 456 U.S. 228, 243 (1982).

Here, a favorable ruling on mitigation relief at Labadie would directly benefit Mr. Melville and Mr. Kappler. Both have averred that their concerns about increased health risks from past exposure to Rush Island’s excess SO<sub>2</sub> emissions would be alleviated if Ameren were required to install SO<sub>2</sub> controls at Labadie and improve future air quality in the region by an amount equal to the illegal pollution. (S.C. Add. FOF ¶¶5, 11). Both have averred that, by worrying less about health risks, they would enjoy their outdoor activities more. (*Id.*)

Again, the scientific evidence presented at trial establishes that reducing SO<sub>2</sub> pollution at Labadie would directly benefit Mr. Melville and Mr. Kappler. First, as discussed above, reducing pollution at Labadie will improve air quality in the same areas harmed by the Rush

Island excess emissions, including areas where Mr. Melville and Mr. Kappler live and recreate. (U.S. FOF ¶¶336-340). Second, the linear concentration-response relationship for PM<sub>2.5</sub> means that any incremental decrease in exposure produces a positive impact on public health. (U.S. FOF ¶¶333-334). As Dr. Schwartz showed, reducing the amount of future pollution from Labadie by an amount corresponding to Rush Island's excess emissions will reduce the risk of adverse health effects and deaths in the exposed population by an amount equal to the increased risk imposed by Rush Island's excess emissions. (U.S. FOF ¶¶333-335). Specifically, reducing pollution at Labadie would decrease the number of deaths, heart attacks and strokes by an amount similar to the increase caused by the excess emissions at Rush Island.

Thus, a favorable decision on remedial relief at Labadie would redress the injury asserted by Mr. Melville and Mr. Kappler.

D. Conclusion: Sierra Club has Established Standing to Seek Injunctive Relief at Labadie.

For the foregoing reasons, Sierra Club has established standing to seek injunctive relief at Labadie.

**II. BALANCING THE EQUITIES FAVORS REMEDIATION RELIEF AT LABADIE ON A QUICKER TIMETABLE THAN PROPOSED BY THE UNITED STATES**

Sierra Club agrees with the United States that, given the severity of the harms caused by Ameren's PSD violations, injunctive relief is necessary to quickly bring Rush Island into compliance by requiring a prompt application for a PSD permit and installation of FGD technology at Rush Island within three years to meet a BACT emission rate no less stringent than 0.05 lb/mmBtu. (U.S. Post-Trial Brief and Prop. COL, Section V.B.). Indeed, Dr. Staudt testified that in 2016 Iatan units 1 and 2—which are coal-fired units located in Missouri—achieved SO<sub>2</sub> emission rates of 0.004 and 0.006 lb/mmBTU, respectively. (U.S. FOF ¶175).



The Court should expect that Rush Island's actual emission rates after installing scrubbers in 2023 would be similar, if not more effective.

Sierra Club further agrees that remediation relief is necessary to mitigate the harm caused by more than a decade of excess SO<sub>2</sub> emissions from Rush Island, and that remediation relief should be achieved by reducing future SO<sub>2</sub> emissions at Labadie by an amount commensurate with the excess SO<sub>2</sub> emitted by Rush Island. (U.S. Post-Trial Brief and Prop. COL, Sections V.C-D.).

Sierra Club disagrees, however, with the timetable proposed by the United States for achieving remediation at Labadie. Each of the two options proposed by the United States—implementing FGDs on two Labadie units, or DSI at all four Labadie units—would achieve remediation by reducing Labadie's SO<sub>2</sub> emissions to 18,000 tons per year, or roughly half of its current annual SO<sub>2</sub> emissions. (U.S. FOF ¶¶328, 331). However, implementing either of these two options would take Ameren approximately fifteen years to reduce SO<sub>2</sub> pollution commensurate with the excess emitted from Rush Island since the time of its illegal modifications. (U.S. FOF ¶328). That excess SO<sub>2</sub> pollution will have climbed to 275,000 tons by the time that Ameren installs pollution controls at Rush Island, assuming that Ameren is required to install scrubbers at Rush Island by 2023. (U.S. FOF ¶¶5, 166, 319).

Sierra Club respectfully submits that the equities in this case weigh in favor of faster remediation relief at Labadie for several reasons. First, due to Ameren's continued non-compliance at Rush Island, the general public and Sierra Club's members have been continuously exposed to excess SO<sub>2</sub> emissions for twelve years and counting. It would take another three years to install scrubbers at Rush Island, resulting in fifteen years of excess SO<sub>2</sub> pollution. Under the United States' proposal, it would take yet another fifteen years beyond that

for remediation relief to be completed. Sierra Club submits that waiting a total of thirty years for Ameren to fully address its illegal conduct is inequitable and counter to the public's interest.

Second, the harm to the general public and Sierra Club's members is profound and, quite simply, a matter of life and death. As discussed in Part I, above, the human consequences of Rush Island's illegal pollution are reflected in Dr. Schwartz's estimates of premature death resulting from each additional 1,000 tons of excess SO<sub>2</sub> emitted by Rush Island—approximately 800 estimated premature deaths between 2007-2016, and dozens more going forward on an annual basis. (S.C. Add. FOF ¶¶21, 26-28). Dr. Schwartz's calculations are the mathematical quantification of the resounding scientific consensus that PM<sub>2.5</sub> increases health risks and causes premature deaths.

Third, the evidence establishes that Ameren can afford the costs associated with faster remediation relief at Labadie. Ameren made clear at trial that it "can afford anything this Court orders." (U.S. FOF ¶391). This concession is borne out by Ameren's financial situation, as summarized by plaintiffs' expert Matthew Kahal. Ameren's financial strength is reflected in its average dividend payment to its parent company of about \$415 million per year and its operating cash flow of more than \$1 billion (U.S. FOF ¶383); its planned \$6.3 billion capital spending program for the next five years (U.S. FOF ¶388); its 16% increase in stock price over the past five years which allows it to access equity markets if needed (U.S. FOF ¶387); and its strong credit rating which allows it to access debt markets on very favorable terms (U.S. FOF ¶389). Moreover, Ameren has benefitted financially by delaying compliance at Rush Island for more than a decade while other utility companies across the country have installed scrubbers (U.S. FOF ¶¶373-380).

These factors all militate in favor of quicker remediation at Labadie than the fifteen-year timetable proposed by the United States. As Dr. Staudt summarized, quicker remediation can be achieved through greater SO<sub>2</sub> reductions at Labadie. (U.S. FOF ¶325). Sierra Club submits that the equities weigh in favor of requiring Ameren to complete remediation within eight-to-ten years, which Dr. Staudt testified is achievable by fuel switching, installing wet FGDs at all four Labadie units, or some combination of options. (U.S. FOF ¶¶323-325). For example, the four-scrubber option would remove almost 34,000 tons of SO<sub>2</sub> per year, or approximately double the two-scrubber or four-DSI options. (U.S. FOF ¶325). The annual operating costs of the four-scrubber option (\$58M) are roughly the same as the DSI option (\$53M). (U.S. FOF ¶326). While the capital cost of the four-scrubber option (\$929M) is twice that of two scrubbers (\$465M), and significantly higher than DSI (\$55M), see U.S. FOF ¶¶326, 394, Ameren has stated that it can afford any of the control technologies at issue in this case.

Alternatively, the Court could impose a lower cap on future SO<sub>2</sub> emissions at Labadie than the 18,000 ton cap proposed by the United States, thereby achieving more expedited remediation. The Court could then require Ameren to propose a plan to reduce emissions to that amount by a date certain. Thus far, Ameren has not offered any proposals of its own—either in terms of technology or a proposed SO<sub>2</sub> tonnage cap—to remediate the excess SO<sub>2</sub> by reducing pollution at Labadie. If it has any, it should put them forward. In the meantime, in these circumstances, the equities favor achieving the greatest environmental benefits, and remediating the harm as quickly as possible.

Date: May 23, 2019

Respectfully submitted,

/s/ Benjamin Blustein

Benjamin Blustein

One of the Attorneys for Plaintiff-Intervenor

Benjamin Blustein (*pro hac vice*)  
David Baltmanis (*pro hac vice*)  
MINER, BARNHILL & GALLAND, P.C.  
325 N. LaSalle, Suite 350  
Chicago, IL 60654  
Tel: (312) 751-1170  
Fax: (312) 751-0438  
[bblustein@lawmbg.com](mailto:bblustein@lawmbg.com)  
[dbaltmanis@lawmbg.com](mailto:dbaltmanis@lawmbg.com)

Sunil Bector (*pro hac vice*)  
SIERRA CLUB  
2101 Webster, Suite 1300  
Oakland CA 94612  
Tel: (415) 977-5759  
Fax: (510) 208-3140  
[sunil.bector@sierraclub.org](mailto:sunil.bector@sierraclub.org)

*Attorneys for Plaintiff-Intervenor Sierra Club*

#### **CERTIFICATE OF SERVICE**

I hereby certify that on May 23, 2019, I caused a copy of the foregoing Plaintiff-Intervenor Sierra Club's Post-Trial Brief and Proposed Conclusions of Law to be filed and served upon all counsel of record via CM/ECF.

/s/ Lisa Mecca Davis  
Lisa Mecca Davis